



COMMONWEALTH of VIRGINIA

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MEMORANDUM

TO: State Water Control Board Members

FROM: Melanie D. Davenport, Director, Water Division 

DATE: July 5, 2011

SUBJECT: Consideration of Petition to Designate a Portion of Bull Run as Exceptional State Waters

Executive Summary

Staff intends to ask the Board at their August 4, 2011 meeting for a decision on whether or not to initiate a rulemaking to amend the Water Quality Standards regulation to designate a segment of Bull Run as Exceptional State Waters (ESW). Please refer to the map in Appendix A of Attachment 1 for a depiction of the petitioned segment. Staff has conducted a site visit and concluded that Bull Run meets the required eligibility criteria necessary for consideration of an Exceptional State Waters designation. However, the criteria for exceptional recreational opportunities in this case are not directly related to the water body such as canoeing/kayaking, or rafting, but rather the outdoor recreational opportunities of the National Park that are enhanced by the presence of the river, such as history study, day hikes, birding, and nature photography. Please refer to Attachment 1 for the full site visit report. Three comments were received and all opposed the designation, primarily due to impacts the designation would potentially have on stormwater permits related to highway construction in the watershed. Please refer to Attachment 2 for a summary of comment.

Background

At the April 14, 2011 meeting of the State Water Control Board, staff presented to the Board a petition from the National Park Service to designate Bull Run from the confluence of Little Bull Run downstream to the crossing of Interstate 66 as Exceptional State Waters. Bull Run is a relatively small Piedmont river in northern Virginia located approximately 20 miles southwest of Washington, DC and is in the Occoquan watershed portion of the Potomac River basin. The petitioned segment forms the northern boundary of the Manassas National Battlefield Park. See Appendix B of Attachment 1 for a location map. At the April meeting, the Board directed staff to:

1. Proceed with notification to Prince William County, Fairfax County, and riparian landowners who would be potentially impacted by an Exceptional State Water designation of a portion of Bull Run and to provide these potentially impacted parties a 60-day opportunity for comment.
2. Publish in the Virginia Register the required notice of a 21-day comment period for the general public, and
3. Appear before the Board after the close of the comment periods to provide a summary of the comments and the results of the staff site visit so that the Board can decide at that time what course of action to take on the petition.

“Tier III” is how the public commonly refers to those waters that are protected from water quality degradation through a prohibition on new or increased point source discharges. The equivalent regulatory terms are “Outstanding National Resource Waters” for EPA and “Exceptional State Waters” for Virginia.

Staff Site Visit

DEQ guidance for the exceptional state waters program requires a staff site visit to the nominated water body for confirmation that the candidate water meets the exceptional state waters eligibility criteria. The nominated water body must meet certain eligibility criteria to be designated and protected by an Exceptional State Water, or Tier III, designation. The nominated water body must exhibit an exceptional environmental setting **and** either support an exceptional aquatic community **or** support exceptional recreational opportunities which do not require modification of the existing natural setting.

Attachment 1 presents staff findings from a May 5, 2011 site visit to the petitioned segment of Bull Run. The staff site visit report also contains photographs of the segment of the water body under consideration. The two staff members that conducted the site visit concurred that Bull Run may meet the criteria necessary to be considered for an Exceptional State Waters designation for the reasons outlined below.

This segment of Bull Run represents an important component of Manassas National Battlefield Park which, as stated in agency guidance for Exceptional State Waters, is one of four factors that must apply to meet the primary eligibility criterion of an exceptional environmental setting. As Bull Run passes by and through the park, it exhibits an exceptional environmental setting along with traits characteristic of a rural setting as opposed to traits that would be exhibited by waters flowing through an otherwise urban/suburban sprawl-type area.

Most all other existing Tier 3 waters have exceptional recreational components that are directly related to the water body such as canoeing/kayaking, rafting, and/or possess an outstanding native trout or other recreational sport fishery. Bull Run does not easily lend itself to these types of activities but it is an important component of a national park that provides for

exceptional outdoor recreational opportunities in the form of history study, day hikes, birding, and nature photography. Staff concludes that Bull Run meets the recreational component for Tier 3 water designation although most other Tier 3 waters with exceptional recreational opportunities include recreation in or on the water itself.

The majority of this segment of Bull Run has not been assessed for aquatic life use. The aquatic life use for this assessed portion is considered fully supporting though it is not of an exceptional nature.

In summary, staff concludes that Bull Run meets the eligibility criteria necessary for designation consideration due to the environmental setting factors outlined above and the outdoor recreational opportunities that are enhanced by the presence of the river. The park and the river provide an opportunity to the citizens of the highly urbanized northern Virginia region to enjoy an outdoor experience in a natural setting.

The petitioned segment of Bull Run has not been assessed as impaired but is within the watershed boundary of a bacteria and an aquatic life TMDL. Portions of Bull Run upstream and downstream of the petitioned segment are listed as impaired for recreational uses due to exceedances of the bacteria criterion and the aquatic life use downstream is listed as impaired due to sedimentation. A more detailed discussion of impairments within close proximity to the segment is in the site visit summary report (**Attachment 1**).

Summary of Comments

The Code of Virginia, section 62.1-44.15:4(B), requires the Board to provide written notification of Exceptional State Waters petitions to each locality in which the waterway lies and to make a good faith effort to provide notice to impacted riparian property owners. The riparian property owner notices are sent to names and addresses taken from local tax rolls provided by the Commissioners of the Revenue or the tax assessor's office of the affected jurisdictions at the request of the Board. A letter of notification and request for comment was sent to the potentially impacted localities and riparian landowners. A full summary of comment received in response to the notification letters and the 21 day public comment period is provided as an attachment to this memo (Attachment 2).

Written comment was received from Fairfax County, Prince William County, and VA Department of Transportation. All commenters expressed concern regarding potential negative impacts to future transportation improvements. Though still in the early stages of planning, a Route 234 Bypass, Manassas Battlefield Bypass, Route 29 Alternate, and possible addition of extra lanes to I-66 were mentioned as potential projects that could be affected by the Tier 3 designation. Any of these projects may result in new or expanded MS4 stormwater discharges which would be prohibited to waters designated as Exceptional State Waters. Prince William Co. also expressed concern about the potential for private septic systems that may fail in the future and the inability of a homeowner to replace the failed system with a single-family home treatment system that would result in a discharge to ESW designated waters.

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Bull Run ESW
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No citizen comment was received.

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Attachments

Attachment 1 – Bull Run staff site visit report
Attachment 2 – Comment summary

ATTACHMENT 1

Bull Run Staff Site Visit Summary Report May 5, 2011

Background

The National Park Service petitioned the agency to designate Bull Run from the confluence of Little Bull Run (locally known as Catharpin Run) downstream to the crossing of Interstate 66 as Exceptional State Waters. The majority of the land on the petitioned segment's southern bank is the Manassas National Battlefield Park. Private property abuts the segment on its northern side and there is a relatively small parcel of private property surrounded by the park. Just less than one mile of Bull Run flows past the low density residential properties. The petitioned segment is approximately 5 miles in length (**See Appendix A**). Bull Run forms the dividing line between Prince William and Fairfax Counties which are the potentially impacted localities.

There are no VPDES permits within the immediate watershed. At least 1 domestic general permit and 1 non-metallic mineral mining general permit (Luck Stone) have been identified as discharging to unnamed tributaries to the petitioned segment.

The petitioned segment of Bull Run has not been assessed as impaired but is within the watershed boundary of a bacteria and an aquatic life TMDL. Portions of Bull Run upstream and downstream of the petitioned segment are listed as impaired for recreational uses due to exceedances of the bacteria criterion and the aquatic life use downstream is listed as impaired due to sedimentation. Bacteria source tracking has identified wildlife, human, livestock, and pets as contributors to the bacteria load. Wildlife and human sources appear to be the largest contributors followed by livestock and pet sources. The recreation use impairment upstream of the petitioned segment ends approximately 2.5 miles from the most upstream proposed boundary for the segment. The downstream recreation and aquatic life use impairments begin approximately 3 miles downstream of the lower boundary of the petitioned segment. Potential sources of sediment loading in the watershed include urban stormwater runoff, stream bank erosion, and sediment loss from habitat degradation associated with urbanization. A portion of Bull Run downriver of the petitioned segment is also listed as impaired for fish consumption due to exceedances of polychlorinated biphenyls (PCBs) in fish tissue which has resulted in a fish consumption advisory for channel catfish and carp. This impairment begins where I-66 crosses Bull Run.

According to the DEQ Guidance Memorandum 04-2021, "Guidance for Exceptional State Waters Designations in Antidegradation Policy Section of Virginia Water Quality Standards Regulation (9 VAC 25-260-30.A.3), two DEQ staff conducted a site visit to Bull Run in an effort to determine if it meets the necessary eligibility criteria to be considered for Exceptional State Waters designation. The following factors are to be considered in determining whether a nominated water body meets the eligibility decision criteria.

Exceptional Environmental Settings

The purpose of this category is to list those features which singly or in combination make a water body physically attractive. In order to meet the mandatory requirement that a water body

nominated for Exceptional State Waters status provide an exceptional environmental setting, one or more of the following factors must apply:

- 1) the water possesses outstanding scenic beauty resulting from the natural features of the basin such as its topography, geology, ecology or physiography, or
- 2) the water has already received designation as a national wild and scenic river, or
- 3) the water represents an important component of a state or national park, forest, or wildlife refuge, or
- 4) the water includes remote, primitive or relatively undeveloped areas with public access by motorized vehicle restricted or unavailable.

In addition to providing an exceptional environmental setting, the candidate water body must either contain exceptional aquatic communities or exhibit exceptional recreational opportunities.

Exceptional Aquatic Communities

In order to demonstrate that a water body nominated for Exceptional State Waters status contains an exceptional aquatic community, one or more of the following factors must apply:

- 1) the water supports an exceptional wild or natural fishery, or
- 2) the waters are designated as Class I or Class II wild natural trout streams according to the Virginia Department of Game and Inland Fisheries classification system (which is also referenced in DEQ's 9 VAC 25-260-370.B and 9 VAC 25-260-390 et seq.), or
- 3) the water contains an exceptional high diversity of aquatic species (fish or benthic macroinvertebrate) as categorized by the appropriate protocol for that water body type and species, such as the 95th percentile of the EPA's Rapid Bioassessment Protocol II method for measuring macroinvertebrate diversity in streams (Plafkin et. al., 1989) or the 95th percentile of biological metrics provided in more recent EPA bioassessment technical support guidance documents for wadeable streams and rivers (Barbour et. al., 1999), lakes and reservoirs (Gerritsen et. al., 1998) and estuarine and coastal marine waters (Bowman et. al., 2000).

Exceptional Recreational Opportunities

In order to demonstrate that a water body nominated for Exceptional State Waters status exhibits exceptional recreational opportunities, the water must support recreational activities which do not require modification of the existing natural setting such as: fishing, canoeing, rafting, kayaking, tubing, birding, hiking, backpacking with primitive camping, or the like.

Observations

Environmental Setting

Bull Run is a relatively small Piedmont river in northern Virginia located approximately 20 miles southwest of Washington, DC and is in the Occoquan watershed portion of the Potomac River basin. (**See Appendix B**) Observations were made at the most upriver portion of the petitioned segment of Bull Run, at approximately mid-segment and at the most downriver end near Interstate 66.

Relatively steep banks on one or both sides of the river are common with the tops of some being upward of 20 feet high and some areas are punctuated with large rock outcrops. This section of the river is characterized by long runs with occasional riffles. No pools were observed at the upper end of the petitioned segment but became more numerous in the vicinity of

mid-segment. The river bottom is mostly gravel and cobble in the upriver end of the segment with the occasional boulder and/or bedrock. Fine sediments appear around mid-segment and become increasingly dominant as one moves downriver. **(See Appendix C Pictures 1-3)**

Both sides of the river are well vegetated. A forested buffer lines both sides and is quite wide in most areas frequently up to 200 feet. The majority of the buffer is a secondary growth of mixed hardwood trees with diameters of approximately 6-12 inches with some individual trees between 2 and 3 feet. The forested buffer forms a good canopy over the much of the river. This represents a relatively undisturbed natural area in an area of Virginia that is rapidly becoming urbanized. If the National Park Service allows this forest to continue to mature, this should continue to provide a valuable natural area that may become increasingly rare in this area of the state. In areas where the river banks are less steep and the floodplain becomes flatter and wider, rich alluvial soils have accumulated. **(See Appendix C; Pictures 4-6)** This condition provides for lush herbaceous undergrowth. Native wildflowers such as bluebells are common. The bluebells are so numerous the annual bluebell bloom is a popular local attraction for nature enthusiasts. Unfortunately, by the time of the staff visit they had already bloomed. **(See Appendix C, Pictures 7-9)** With the exception of the historic Stone Bridge, Route 29, and I-66 bridges, no structures were visible from the river. **(See Appendix C; Picture 10)**

Aquatic Life

The petitioned segment of Bull Run does not support an exceptional natural fishery nor is it designated as Class I or II natural trout waters. A cursory inspection for benthic macroinvertebrates was done at the points of observation. Stonefly, caddisfly, water penny and snails were noted, as were turtles and frogs. No fish were observed though that does not indicate a lack of a fish community. Recent rains within the watershed had resulted in increased turbidity which made observation difficult.

The majority of this segment of Bull Run has not been assessed for aquatic life use. An approximately one mile portion at the lower end (confluence with Youngs Branch downstream to the I-66 bridge) has been assessed. The aquatic life use for this assessed portion is considered fully supporting.

Recreational Opportunities

Bull Run offers limited opportunities for canoeing and kayaking. Paddling this segment would be done most effectively during high spring flows due to sections of shallow water. Walking/hiking is popular within the park as there is a well defined trail that parallels much of the petitioned segment and there are many other trails in the park. **(See Appendix C; Pictures 5 & 6)**

Bird watching is also popular in the river corridor as well as the rest of the park. The park is listed as a stop under Virginia's Birding and Wildlife Trail, a program managed by the Virginia Department of Game and Inland Fisheries. The park has also been selected as an Audubon Important Bird Area. The National Park Service has been maintaining the grounds in their original state which has created a unique wildlife viewing opportunity. The native grasslands that are sustained for historical accuracy are among the most extensive remaining in Prince William County. Grassland species such

as grasshopper sparrow, eastern bluebird, field sparrow, northern bobwhite, and red-tailed hawk may be common at certain times of the year and rarities such as long-eared owl may be seen foraging over these fields during the winter.

Conclusions

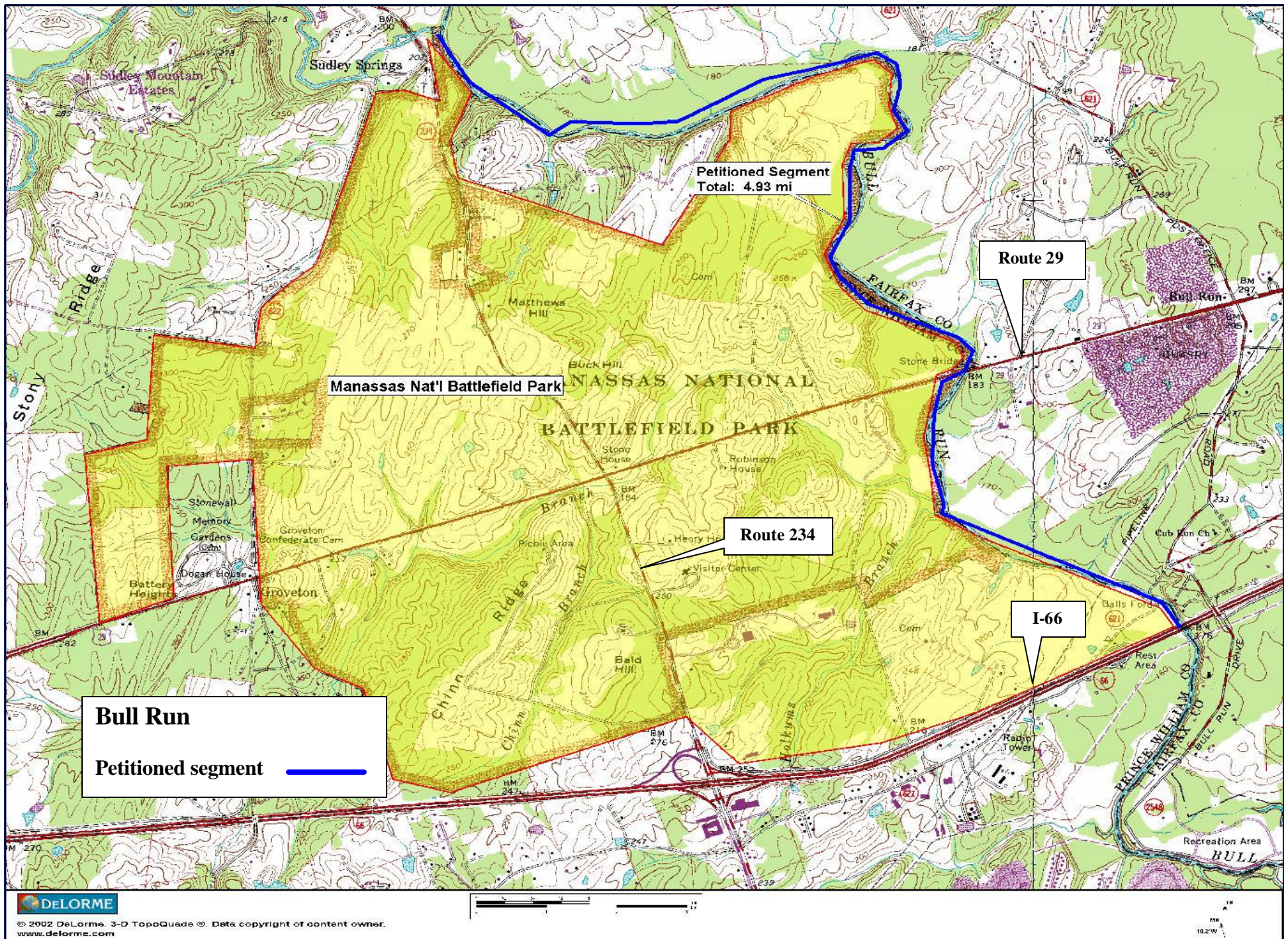
This segment of Bull Run represents an important component of Manassas National Battlefield Park which, as stated in agency guidance for Exceptional State Waters, is a factor to be considered when assessing whether or not a water body meets the primary eligibility criterion. The park marks a seminal point in the Civil War. Most every student of U.S. history has heard of the Battle of Bull Run which refers to the first major conflict between North and South. Two battles were fought here in 1861 and 1862, and Confederate victories brought southern military power to its zenith.

There are a number of small Piedmont rivers in relatively rural and undeveloped areas of Virginia as well as in highly developed landscapes such as exists in northern Virginia. This creates a broad “spectrum” of waters ranging from those that are relatively undisturbed by anthropogenic influences to those where impacts are obvious. As Bull Run passes by and through the park, it exhibits environmental traits characteristic of a rural setting as opposed to traits that would be exhibited by waters flowing through an otherwise urban/suburban sprawl-type area. (See **Appendix C, Picture 13**)

Despite lacking dramatic environmental features, the park and the river provide an opportunity to the citizens of the highly urbanized northern Virginia region to enjoy an outdoor experience in a natural setting. Bull Run is an integral part of the habitat diversity present within the park that allows for correspondingly diverse wildlife. The river and the general environs as it runs through the park are attractive and the area is rich in history and local culture.

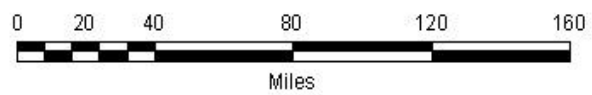
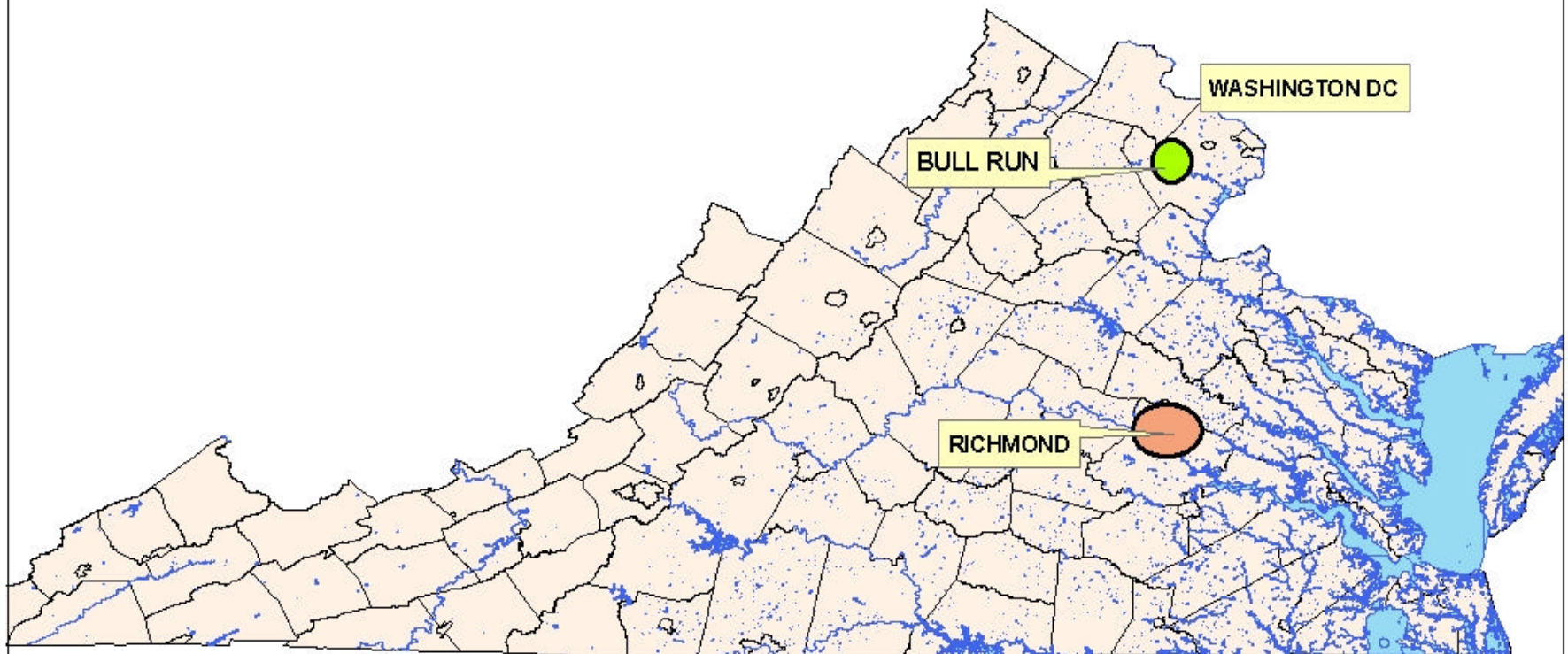
Bull Run is an important component of a national park that provides for exceptional outdoor recreational opportunities in the form of history study, day hikes, birding, and nature photography. It may be interpreted that Bull Run meets eligibility criteria necessary for designation consideration due to the environmental setting factors outlined above and the outdoor recreational opportunities that are enhanced by the presence of the river.

APPENDIX A



APPENDIX B

Bull Run Location Map



APPENDIX C



1. Bull Run – near upriver boundary



2. Bull Run – near upriver boundary



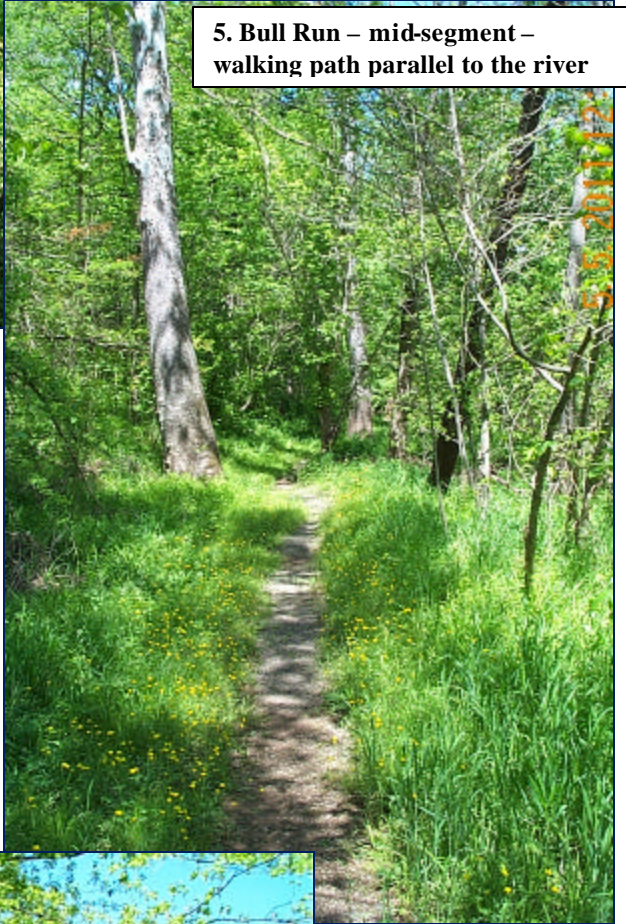
3. Bull Run – near upriver boundary

5. 5. 2011 11:50



4. Bull Run – mid-segment – view
from top of river bank

5. 5. 2011 10:55



5. Bull Run – mid-segment –
walking path parallel to the river



6. Bull Run – mid-segment



7. Bull Run – mid-segment
bluebells at Stone Bridge

Source: <http://www.nps.gov/mana/naturescience/index.htm>



8. Bull Run – bluebells along
riverside walking path

Source: <http://www.nps.gov/mana/naturescience/bluebells.htm>



9. Bull Run – wild flowers along
riverside walking path

10. Bull Run – mid-segment; Stone Bridge



11. Bull Run – near downriver boundary





12. Bull Run – near downriver boundary



13. Route 234 southbound just outside Manassas National Battlefield Park

ATTACHMENT 2

The nominated segment of Bull Run is from the confluence of Little Bull Run downstream to the crossing of Interstate 66.

LOCALITY COMMENT

Fairfax County – Dept. Planning & Zoning	<p>Fairfax Co. states their commitment to the protection of the water quality of Bull Run and the Occoquan Reservoir and they also support the efforts of Manassas National Battlefield Park (MNBP) to protect its resources. Much of the shoreline within Fairfax Co. is owned by the county park authority and there are considerable use restrictions that should ensure compatibility with MNBP and the protection of Bull Run. The entirety of the riparian area along Bull Run in Fairfax Co. south of Route 29 is zoned as very low density housing (one dwelling per 5 acres) as part of an effort to protect water quality in the Occoquan Reservoir. All lands adjacent to the petitioned segment north of 29 are owned by the county park authority. They state they do not see any threats to Bull Run from land use actions on adjacent parcels within Fairfax Co.</p> <p>The designation of Bull Run as Exceptional State Waters (ESW) does not appear to be in conflict with the county's land use recommendations in their Comprehensive Plans however they have concerns with the potential for impacts to future transportation plans. The Fairfax Co. Transportation Plan identifies planned road widening for I-66, Route 29, and a proposed Battlefield Bypass which would cross Bull Run in close proximity to the upstream boundary of the proposed designation. An ESW designation could prohibit any new municipal separate storm sewer system (MS4) or expansions to existing systems should that be necessary. This limitation would apply to the county as well as VDOT. They state they do not anticipate any new MS4 discharges to this segment of Bull Run though they cannot state with certainty there would never be a need to discharge stormwater to the segment.</p> <p>They are also concerned about future implications that may result from an ESW designation. Stormwater management and point source discharge requirements are becoming more stringent with time. They state it is conceivable that future regulations or amendments could be adopted that would establish more protective requirements for point/non-point discharges upstream of ESWs.</p> <p>They believe the substantive benefits would be limited given the controls on use activities on parcels in Fairfax Co, adjacent to the segment and only a small area adjacent to the segment in Prince William Co. is outside of the MNBP. They support the efforts of the National Park Service to highlight the importance of Bull Run however they do not believe an ESW designation is the appropriate mechanism to do this and they recommend against the proposed designation.</p>
Prince William County – Planning Office	<p>The Prince William Planning Dept. expressed concerns similar to Fairfax Co. regarding potential negative impacts to planned transportation improvement projects. They acknowledge that construction impacts to Bull Run would be temporary and therefore allowed should the stream be designated as ESW but stormwater management would need to be addressed. An ESW designation would prevent any new or increases to existing MS4 discharges. Their health department has expressed concern about the potential for private septic systems that may fail in</p>

	the future and the inability of a homeowner to replace the failed system with a single-family home treatment system that would result in a discharge to ESW designated waters. A permit to discharge would not be allowed in this case.
VA Dept. of Transportation (VDOT)	They expressed their support of the Commonwealth's efforts to protect quality streams from degradation but they also have serious concerns regarding impacts of an ESW designation on transportation infrastructure. VDOT has 2 major roadways that cross through or immediately adjacent to the petitioned segment of Bull Run, Route 29 and I-66. They are concerned about the potential inability to maintain or improve those roadways due to an ESW designation preventing new or expanded stormwater management discharges. They state that VDOT's agency mission is to plan, deliver, operate, and maintain a transportation system that is safe, enables easy movement of people and goods, enhances economy and improves quality of life. An ESW designation would severely inhibit their ability to achieve their mission the Northern Virginia region. They respectfully ask that the Board deny the request to initiate a regulatory action to designate a portion of Bull Run as an ESW.